CLAIMS

1.   A multipanel sliding door comprising at least two panels which are supported for travel in substantially parallel planes along runners, characterised in that a rack and wheelwork arrangement is provided for the movement of the door panels.

2.   The multipanel sliding door of claim 1, characterised in that it is comprised of:

     -    a door header F extending parallel to the door runners,

     -    a set of n adjacent panels $P = \{P_0, P_1,...,P_{n-1}\}$, whereof a panel P_0 is stationary and the remaining $n-1$ panels P_1, $P_2,...,P_{n-1}$ are supported for travel in planes substantially parallel thereto, the n panels $P_0, P_1,...,P_{n-1}$ of set P having equal width L,

     -    a first set of n-2 racks $CF = \{CF_0, CF_1,..., CF_{n-3}\}$ which are fixedly supported by door header F, the length of racks $CF_0, CF_1,..., CF_{n-3}$ of set CF being equal to L, 2L,..., $(n-2)L$, respectively,

     -    a second set of n-2 racks $CP = \{CP_2, CP_3,..., CP_{n-1}\}$ which are attached to or formed unitarily with panels P_2, $P_3,..., P_{n-1}$, respectively, of set P, the length of racks CP_2, $CP_3,..., CP_{n-1}$ of set CP being equal to L,

     -    a set of n-2 wheelworks $R = \{R_1, R_2,..., R_{n-2}\}$ which are rotatably mounted on n-2 panels $P_1, P_2,..., P_{n-2}$,

respectively, of set P and are designed to mesh together with first CF and second CP set of racks,

set R including:

- a wheelwork R_1 formed of a single toothed wheel which is meshed together with rack CF_0 of set CF and with rack CP_2 of set CP, and

- n-3 wheelworks R_2, R_3,..., R_{n-2} each formed of two coaxial and co-rotating toothed wheels, whereof a first larger diameter toothed wheel is meshed together with rack CF_1, CF_2,..., CF_{n-3}, respectively, of set CF and a second smaller diameter toothed wheel is meshed together with rack CP_3, CP_4,..., CP_{n-1} of set CP, wherein the ratio of the diameter D_k of the larger toothed wheel to the diameter d_k of the smaller toothed wheel of k-th wheelwork R_k is equal to $k = 2, 3,..., n$-2.

3. The multipanel sliding door of claim 1 characterised in that it is comprised of:

- a set of n adjacent panels $P = \{P_0, P_1,...,P_{n-1}\}$, whereof a panel P_0 is stationary and the remaining n-1 panels P_1, P_2,...,P_{n-1} are supported for travel in planes substantially parallel thereto, the n panels P_0, P_1,...,P_{n-1} of set P having equal width L, and n-2 panels P_0, P_1,...,P_{n-3} of set P having an extension arm B_0, B_1,...,B_{n-3}, respectively, at

their top extending in the direction of travel of the panels,

- a first set of n-2 racks CS = $\{CS_0, CS_1,..., CS_{n-3}\}$ which are attached to or formed unitarily with extension arms $B_0, B_1,..., B_{n-3}$, of n-2 panels $P_0, P_1,..., P_{n-3}$, respectively, of set P,

- a second set of n-2 racks CD = $\{CD_2, CD_3,..., CD_{n-1}\}$ which are attached to or formed unitarily with panels $P_2, P_3,..., P_{n-1}$, respectively, of set P,

- a set of n-2 wheelworks R = $\{R_1, R_2,..., R_{n-2}\}$ which are rotatably mounted on n-2 panels $P_1, P_2,..., P_{n-2}$, respectively, of set P and are designed to mesh together with first CS and second CD set of racks.

4. The multipanel sliding door of claim 1, characterised in that it is comprised of:

- a set of n adjacent panels P = $\{P_0, P_1,...,P_{n-1}\}$, which are supported for travel in substantially parallel planes and have equal width L,

- a first set of n-2 racks CS = $\{CS_0, CS_1,..., CS_{n-3}\}$ which are attached to or formed unitarily with n-2 panels $P_0, P_1,..., P_{n-3}$, respectively, of set P,

- a second set of n-2 racks CD = $\{CD_2, CD_3,..., CD_{n-1}\}$ which are attached to or formed unitarily with n-2 panels $P_2, P_3,..., P_{n-1}$, respectively, of set P,

- a set of n-2 pairs of wheelworks R = {(RS_1, RD_1), (RS_2, RD_2),..., (RS_{n-2}, RD_{n-2})} which are rotatably mounted on n-2 panels P_1, P_2,..., P_{n-1}, respectively, each pair of wheelworks (RS_1, RD_1), (RS_2, RD_2),..., (RS_{n-2}, RD_{n-2}) including a first wheelwork RS_1, RS_2,..., RS_{n-2} designed to mesh together with rack CD_2, CD_3,..., CD_{n-1}, respectively, of second set of racks CD and a second wheelwork RD_1, RD_2,..., RD_{n-2} designed to mesh with rack CS_0, CS_1,..., CS_{n-3}, respectively, of first set of racks CS, the first and second wheelwork of each pair of wheelworks (RS_1, RD_1), (RS_2, RD_2),..., (RS_{n-2}, RD_{n-2}) of set R being interlinked with one another by a transmission T_1, T_2,..., T_{n-2}, respectively, in order to rotate at the same rotational speed.